RYKO SOLUTIONS, INC.

GRIMES

BAILEY HADNOTT
ENVIRONMENTAL ENGINEERING
THE UNIVERSITY OF IOWA

COMPANY PROFILE

Ryko Solutions, Inc. celebrates 40 years of business in 2014. The company is North America's leading car wash equipment and service provider. Ryko Solutions is also a major provider of technical services, car wash chemicals, cleaning products, and product marketing. At the company's Grimes, Iowa, headquarters, approximately 100 people work to create products for a global market. The Grimes facility operates most of its stations 40 hours per week, with 80 hours per week utilized for fabrication.

PROJECT BACKGROUND

Some of the general refuse discarded from Ryko Solutions' Grimes facility is recyclable. Such materials include product packaging and scraps from the fabrication and assembly process. Following a waste stream analysis, strategies were identified to reduce disposal costs and improve process efficiencies by integrating source reduction, reuse of materials, and recycling.

INCENTIVES TO CHANGE

Ryko Solutions' production process requires thousands of new parts each week. Each new part includes packaging material that contributes to the facility's solid waste stream. Various production processes during assembly create scraps that are currently discarded. Solvents and solutions are currently used with excess; guidelines for chemical use are needed to discourage waste.

By increasing recycling opportunities within its facility, Ryko Solutions plans to decrease effluent solid waste by 50 percent. Increased recycling efforts, integrated source reduction, and in-house reuse of materials are all part of the company's strategy.

RESULTS

Recycling Program: Metal and some cardboard are currently recycled at Ryko Solutions' Grimes facility, while plastics and paper are landfilled. More than 90 percent of the total waste stream currently sent to the landfill could be diverted with a sorted recycling program, facilitated by a local recycler. Over the course of a year, this change would mean more than 500 tons of recyclable material diverted from the landfill. Such a program would save Ryko Solutions more than $65,000 annually as a result of reduced landfill costs and increased recycling revenue.

CONVENTIONAL AIR POLLUTANTS AND GREENHOUSE GASES DIVERTED IN **METRIC** TONS

From **Implemented** and In **Progress** recommendations

TOTAL FOR ALL SECTORS								
CO_2	SO_2	CH_4	N_2O	CFC	NO_X	VOC	PM_{10}	$MTCO_2e$
10.75	0.02	41.06	0.12	0.11	0.04	0.99	0.09	291.00

CONVENTIONAL AIR POLLUTANTS AND GREENHOUSE GASES DIVERTED IN **METRIC** TONS

From Recommendations in **Recommended Status**

TOTAL FOR ALL SECTORS								
CO_2	SO_2	CH_4	N_2O	CFC	NO_X	VOC	PM_{10}	$MTCO_2e$
								104.00

Efficient Acid Washing: Assessment of the company's acid washing process revealed an efficiency loss between raw material usage and final application. Because high-volume, low-pressure spray guns have higher transfer efficiencies, upgrading the current standard spray gun would provide improvements to the acid washing process. The spray gun upgrade, along with modified spraying techniques, could save 151 gallons of acid wash per year, for an annual financial savings of $900.

Solvent Distillation System: After car wash parts are primed and painted, paint guns and pots are cleaned with acetone. The process has no measurement system in place, thus employees tend to use more primer or acetone than is required. A new procedure detailing the appropriate amount of solvent to use would reduce the company's primer and acetone disposal, currently a large portion of its hazardous waste stream. In addition, the installation of a solvent distillation system could recover up to 95 percent of the acetone for reuse. With the new procedures in place, over 450 gallons of hazardous waste could be diverted, saving more than $7,000 annually.

Reuse Incoming Material: When products are received from vendors, plastic bags, bubble wrap and other packaging materials join Ryko's waste stream. While some packaging products are reused currently, such as cardboard boxes and wood pallets, an opportunity exists to increase reuse of shipping materials. Expanding the facility's reuse program could result in 11 tons of plastic diverted from its solid waste stream each year.

Reuse of Scrap Metal: The fabrication laser cutter at Ryko Solutions' Grimes facility uses a computer program to optimize both the placement and nesting of parts cutouts. The program does not allow for the possibility of parts sharing a common edge, thus creating an unnecessary amount of unusable "skeleton" material between each sheet. If parts were moved closer together during the printing process, and 10 percent of the raw material could be conserved, more than 50 tons of metal could be diverted from the landfill and saved for production.

PROJECT	ANNUAL COST SAVINGS	ENVIRONMENTAL RESULTS	STATUS
RECYCLING PROGRAM	$65,537	200 TONS	IMPLEMENTED
EFFICIENT ACID WASHING	$906	151 GALLONS	RECOMMENDED
SOLVENT DISTILLATION SYSTEM	$7,116	2.15 TONS	IN PROGRESS
REUSE INCOMING MATERIAL	$617	11 TONS	RECOMMENDED
REUSE OF SCRAP METAL	UNKNOWN	54.92 TONS	RECOMMENDED